

Corporate Headquarters  
40 West 40th Street  
New York, New York 10018  
Tel. (212) 703-5426

Lenore H. Schupak  
Director  
Environmental Technology

CERTIFIED MAIL - RETURN RECEIPT  
REQUESTED

October 15, 1985

Mr. Charles Duritsa  
Program Manager - Hazardous Waste  
Penn. Dept. of Environmental Resources  
Bureau of Solid Waste Management  
Highland Building  
121 South Highland Avenue  
Pittsburgh, PA 15206-3988

Re: Union Switch & Signal Div.  
PAD 000 001 115  
Allegheny County

Dear Mr. Duritsa:

In accordance with my September 11th letter to you, please find enclosed herewith three items relative to our Union Switch & Signal Division. These items are:

1. A revised Notification of Hazardous Waste Activity;
2. Demonstration of Good Faith regarding EIL; and
3. Hazardous Waste Storage Facility Closure Plan.

Regarding the revised Notification of Hazardous Waste Activity, we have continued to itemize on said form waste sources codified by F001, F002, F003, F004 and F005. However, as you may know, EPA proposed, but has not finalized their intent to consolidate F001 through F005 into F001 (as reported in April 30, 1985 Federal Register Vol. 50, No. 83). If and when this is finalized by EPA and PA DER we will, of course, use the F001 code only, but presume it will not be necessary to resubmit another Notification of Hazardous Waste Activity at that time.

Although our Hazardous Waste Storage Facility Closure Plan is herewith submitted 180 days prior to scheduled closure, Union Switch & Signal is prepared to accelerate said closure activity as soon thereafter as it receives PA DER approval of its Plan. To coordinate with other plant-wide maintenance activities, it would be most helpful if the Department reviewed and approved the Plan within 3 months, so that we may look forward to completion of this project by early Spring 1986. I would appreciate

Mr. Charles Duritsa  
Program Manager - Hazardous Waste  
Penn. Dept. of Environmental Resources  
Bureau of Solid Waste Management  
Highland Building  
121 South Highland Avenue  
Pittsburgh, PA 15206-3988

Page 2

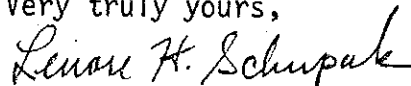
October 15, 1985

your advising me as to whether such an accelerated schedule is possible.

If you have any questions regarding the material submitted, please do not hesitate to call me at the telephone number indicated above, or Dave Tourdot at Union Switch & Signal (412/273-4183).

Thank you for your prompt attention to this matter.

Very truly yours,



Lenore H. Schupak  
Director  
Environmental Technology

enclosures

cc: Messrs. John Haluszczak w/o enclosures  
Dave Tourdot           "       "  
Anand Sharma           "       "

BUREAU OF SOLID WASTE MANAGEMENT  
NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

I. INSTALLATION'S EPA I.D. NUMBER											
P	A	D	0	0	0	0	0	1	1	5	
II. NAME OF INSTALLATION											
Union Switch and Signal Division											
III. INSTALLATION MAILING ADDRESS											
STREET OR P. O. BOX											
1789 South Braddock Avenue											
CITY OR TOWN								ST.	ZIP CODE		
Swissvale								P A	15218		
IV. LOCATION OF INSTALLATION											
STREET OR ROUTE NUMBER								MUNICIPALITY			
1789 South Braddock Avenue								Swissvale			
CITY OR TOWN				ST.	ZIP CODE			COUNTY			
Swissvale				P A	15218			Allegheny			
V. INSTALLATION CONTACT											
NAME AND TITLE (last, first, & job title)								PHONE NO. (area code & no.)			
Marcel D. Tourdot, Manager, Safety, Security & Environment								412-273-418			
VI. OWNERSHIP											
A. NAME OF INSTALLATION'S LEGAL OWNER											
American Standard Inc.											
B. TYPE OF OWNERSHIP											
(Enter the appropriate letter into box)											
F = FEDERAL M = NON-FEDERAL											
M											
VII. SIC CODES (4-digit in order of priority)											
A. FIRST					C. THIRD						
3	7	4	8	(specify) Railroad Equipment	3	3	9	8	(specify) Heat Treating		
B. SECOND					D. FOURTH						
3	4	7	(specify) Electroplating	(specify)							
VIII. TYPE OF HAZARDOUS WASTE ACTIVITY											
<input checked="" type="checkbox"/>	A. GENERATION		<input type="checkbox"/>	C. STORE		<input checked="" type="checkbox"/>	E. TRANSPORTATION (COMPLETE ITEM IX)		<input type="checkbox"/>	G. REUSE, RECYCLE, RECLAIM	
<input type="checkbox"/>	B. TREAT		<input type="checkbox"/>	D. DISPOSE		<input checked="" type="checkbox"/>	F. PERMIT BY RULE		<input type="checkbox"/>	H. OTHER (specify)	
IX. MODE OF TRANSPORTATION (transporters only)											
<input type="checkbox"/>	A. AIR		<input type="checkbox"/>	B. RAIL		<input checked="" type="checkbox"/>	C. HIGHWAY		<input type="checkbox"/>	D. WATER	
<input type="checkbox"/> E. OTHER (specify)											
X. EXISTING ENVIRONMENTAL PROGRAM PERMITS											
A. NPDES (Discharges to Surface Water)					D. PSD (Air Emissions from Proposed Sources)						
B. UIC (Underground Injection of Fluids)					E. SOLID WASTE						
C. RCRA (Hazardous Wastes)					F. OTHER (specify)						
P	A	D	0	0	0	0	0	1	1	5	
P	A	A	1	0	1	0	2	Transporter License			
XI. TYPE OF NOTIFICATION											
Mark "X" in appropriate box to indicate whether this is your installation's first notification of hazardous waste activity, or notification of a change of general information, hazardous waste handled, or hazardous waste activity. If you check B, C, D, E, or F, attach a letter of explanation (SEE INSTRUCTIONS).											
<input type="checkbox"/>	A. FIRST NOTIFICATION			<input type="checkbox"/>	C. DELETION OF A WASTE			<input type="checkbox"/>	E. DELETION OF AN ACTIVITY		
<input checked="" type="checkbox"/>	B. CHANGE OF GENERAL INFORMATION			<input type="checkbox"/>	D. ADDITION OF A WASTE			<input type="checkbox"/>	F. ADDITION OF AN ACTIVITY		

CONTINUE ON REVERSE

## XII DESCRIPTION OF HAZARDOUS WASTES (Continued from front)

A. HAZARDOUS WASTES FROM NON-SPECIFIC SOURCES. Enter the four-digit number from §75.261(h)(2) for each listed hazardous waste from non-specific sources your installation handles. Use additional sheets if necessary.

1 D 0 0 1	2 D 0 0 2	3 D 0 0 3	4 D 0 0 7	5 D 0 0 8	6 
7 	8 	9 	10 	11 	12 

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four-digit number from §75.261(h)(3) each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13 	14 	15 	16 	17 	18 
19 	20 	21 	22 	23 	24 
25 	26 	27 	28 	29 	30 

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four-digit number from §75.261(h)(4) for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31 	32 	33 	34 	35 	36 
37 	38 	39 	40 	41 	42 
43 	44 	45 	46 	47 	48 

D. CHARACTERISTICS OF NON-LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non-listed hazardous wastes your installation handles. (See §75.261(g)(2) through (5))

☐

1. IGNITABLE

☐

2. CORROSIVE

☐

3. REACTIVE

☐

4. EPTOXIC

## XIII CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE

NAME and OFFICIAL TITLE (Type or Print)

DATE SIGNED

FOR OFFICIAL USE ONLY



## XII DESCRIPTION OF HAZARDOUS WASTES (Continued from front)

**A. HAZARDOUS WASTES FROM NON-SPECIFIC SOURCES.** Enter the four-digit number from §75.261(h)(2) for each listed hazardous waste from non-specific sources your installation handles. Use additional sheets if necessary.

1 F 0 0 1	2 F 0 0 2	3 F 0 0 3	4 F 0 0 5	5 F 0 0 6	6 F 0 0 7
7 F 0 0 8	8 F 0 0 9	9 F 0 1 0	10 F 0 1 1	11	12

**B. HAZARDOUS WASTES FROM SPECIFIC SOURCES.** Enter the four-digit number from §75.261(h)(3) each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30

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31	32	33	34	35	36
37	38	39	40	41	42
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☒ 1. IGNITABLE      ☒ 2. CORROSIVE      ☒ 3. REACTIVE      ☒ 4. EP TOXIC

## XIII CERTIFICATION

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SIGNATURE

NAME and OFFICIAL TITLE (Type or Print)

DATE SIGNED

Kenneth Liatsos, Vice President & Group Executive

9/24/85

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Marsh & McLennan  
McLennan

Marsh & McLennan International  
1221 Avenue of the Americas  
New York, New York 10020  
Telephone 212 997-2000

SEP 19 1985

September 16, 1985

Mr. Norman B. Chanzis  
Director, Risk Management  
American Standard Inc.  
40 West 40th Street  
New York, NY 10018

EIL Coverage

Dear Norm:

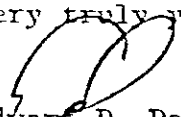
I am in receipt of your August 8th letter regarding the captioned topic and can confirm that Marsh & McLennan has made a good faith effort on behalf of American Standard to secure Environmental Impairment Liability coverage not only for the state of New Jersey but for all locations which require the same.

As you know, until just before the renewal on April 1, 1985, Marsh & McLennan and American Standard expected Travelers to renew at least some of their limits for their environmental hazard policy. Travelers declined to renew this coverage as a result of their overall loss experience in this area of insurance and their failure to attract adequate reinsurance support.

Marsh & McLennan has been in the marketplace to obtain EIL coverage for American Standard and other clients but have noted that markets which had previously written this coverage no longer do so. These markets include Hartford Steam Boiler, Pacific Insurance Company, the London Marketplace, St. Paul Surplus Lines, Evanston Insurance Company and First State Insurance Company.

Norm, with our vast contacts in the marketplace, we are unaware of the availability of environmental impairment liability coverage and should markets in the future decide to begin writing this business, we will notify you immediately so that you may proceed with obtaining coverage. At this time we know of no markets planning to enter the EIL insurance marketplace.

Very truly yours,

  
Edward D. Dadakis  
Assistant Vice President  
EDD/el

cc: Thomas Clarke      Christopher Forster  
Kathleen Cutler      Joseph Ranaldi  
Nadine Hendrix      Nancy Brennan

Storage Facility Closure Plan

E.P.A. ID PAD 000001115

Union Switch and Signal Division

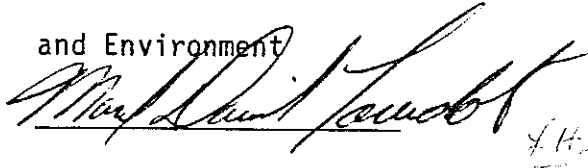
American Standard Inc.

1789 South Braddock Avenue

Swissvale, PA 15218

Prepared by: Marcel David Tourdot

Manager, Safety, Security  
and Environment



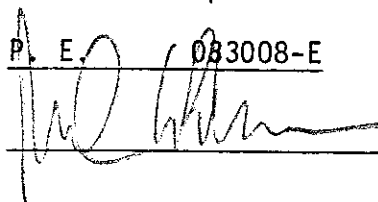
Reviewed by: Fred C. Hart Associates

Michael A. Barbara, Manager

Hazardous Waste and Environmental

Studies Group

P. E. 083008-E



October, 1985

All the data set forth in Section Number 2 and 3 of the enclosed Closure Plan is submitted under a claim of business confidentiality because its disclosure, in whole or in part, in such way to reveal its source may reasonably be expected to have an adverse competitive impact. In this connection, it is hereby requested that the Union Switch and Signal Division be immediately informed in the event that the Pennsylvania Department Environmental Research should receive any request for disclosure of any of the data or its source.

This Closure Plan represents the 1985 update.

Earlier file copies are dated: 5/11/81

7/1/82

7/1/83

8/29/83

6/29/84



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## INTRODUCTION

Union Switch and Signal Division (USSD) has been operating its on-site hazardous waste storage facility under RCRA Interim Status Part A authorization. USSD submitted to Pennsylvania Department of Environmental Resources on August 29, 1983 its RCRA Part B application and full supporting documentation as prepared by the independent consulting firm of Fred C. Hart Associates (with offices in Pittsburgh, PA and New York, NY). To date, USSD submitted to Pennsylvania Department of Environmental Resources an addendum to said application on June 29, 1984. Pennsylvania Department of Environmental Resources has not indicated any outstanding deficiencies with the Part B application. However, rather than await Part B approval, USSD has elected to close its hazardous waste storage facility. Any hazardous waste generated thereafter will be handled within a 90-day turn around allowing USSD to operate under a Generator status only.

The Closure Plan which follows herewith is organized into seven sections that describe the general physical and environmental setting of the plant and its waste storage area; routine waste generation and handling procedures; and lastly, procedures to be implemented to effectuate closure of the storage area.

## 1.0 FACILITY DESCRIPTION

This section provides information on the location, operation, and administration of the Union Switch and Signal Division. It is presented in accordance with 40 CFR Section 122.25(a)(1),(10),(11), and (19) and PADER 75.265 (z)(18)(i), (ii) and (21)(ii) and (iii) where applicable.

### 1.1 Business Description

The Union Switch and Signal Division (USSD) American Standard Inc. is a major producer of various electrical and mechanical components used in railroad signaling and control systems.

American Standard Inc. is the parent company of USSD. The business addresses of both of these organizations and the contacts for environmental policy are shown below:

Union Switch and Signal Division  
Marcel D. Tourdot, Manager, Safety, Security  
and Environment  
1789 South Braddock Avenue  
Swissvale, PA 15218

American Standard Inc.  
Lenore H. Schupak, Director Environmental Technology  
40 West 40th Street  
New York, New York 10018

### 1.2 Location Information

This subsection contains information on the USSD site in Swissvale, PA, and on the area surrounding the facility. It includes topographic information, a wind rose, data on roads and easements.

The topography of the area is best described as a plateau, with the facility constructed on a flat area well above the main parking lot and the Penn Lincoln Parkway. No topographic features interfere with the sound management of hazardous wastes. The generalized geology of the area is the Conemaugh Group. Neither USSD nor others in the surrounding area use the ground water as a source of supply.

### 1.2.1 Wind Rose

Figure 2 is a wind rose, showing the prevailing wind direction and wind intensities. As shown, the winds are most frequently observed from the west.

### 1.2.2 Flood Plain

The USSD facility is not in the 100 year flood plain of any rivers or streams. A letter from the Army Corps of Engineers verifying that the facility is not in a 100-year flood plain is available in USSD files.

### 1.2.3 Roads

A number of internal roads are present inside the boundary of the facility. The roads are used for transporting raw materials into the facility and carrying finished products out, and for the intrafacility transfer of equipment, materials, and wastes.

### 1.2.4 Road Construction

All roads in the facility are capable of withstanding the infrequent stress caused by vehicles transporting hazardous wastes. The internal paved roads of the facility are designed to withstand travel of large trucks, such as 18-wheelers or large flatbeds, at low speeds. Trucks bearing loads much heavier than the 80 drums of waste carried by the hazardous waste transporter routinely travel over the roads with no difficulty, indicating that the load-bearing capacity is satisfactory for the movement of hazardous waste. Regular road repair promotes the integrity of the paved surfaces. Unpaved surfaces are designed for low-speed travel of light duty vehicles, such as pickup trucks, automobiles, forklift trucks, and small trucks. Occasional use by much larger vehicles occurs with no detrimental impact.

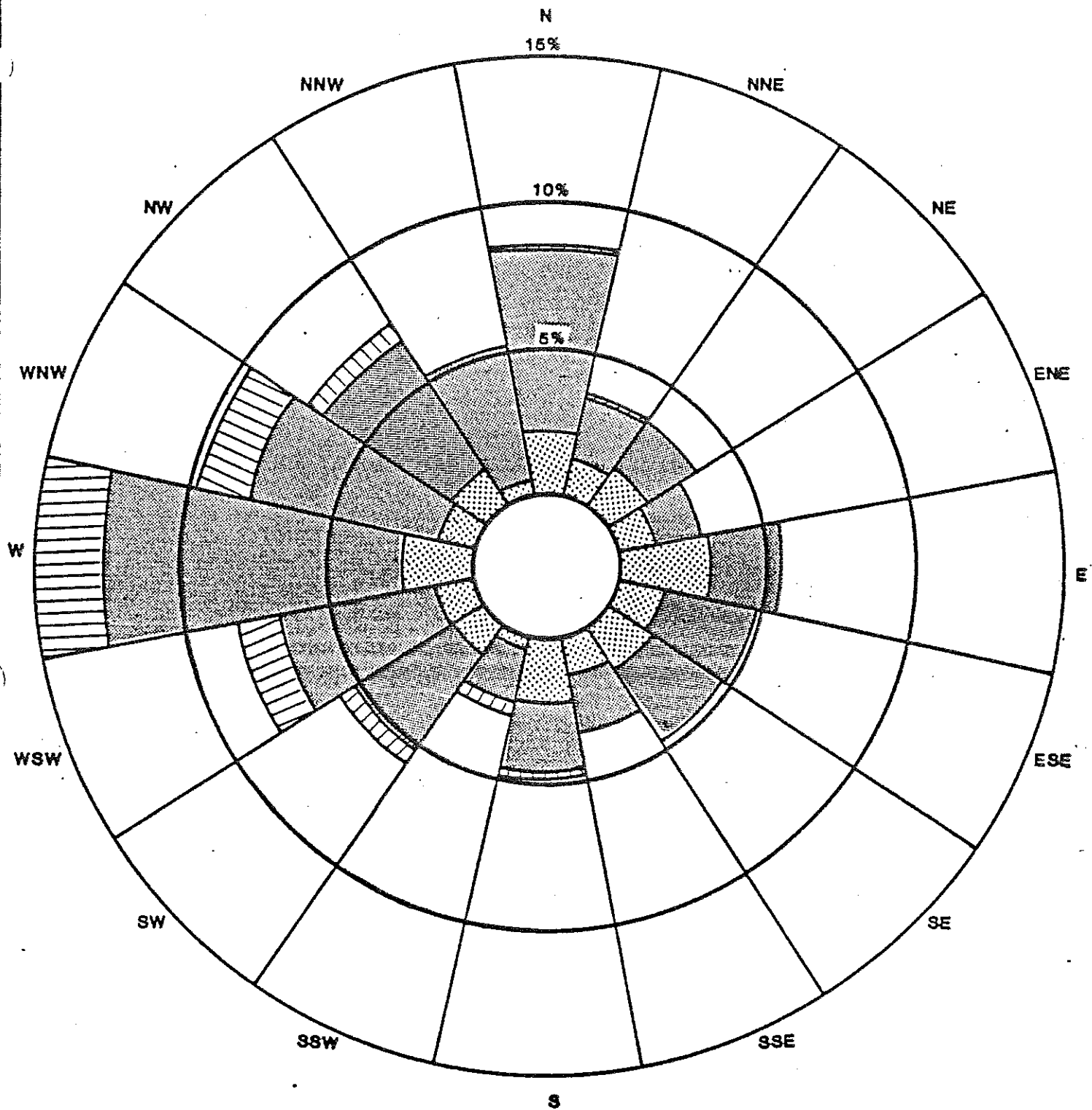


FIGURE -2  
WIND ROSE FOR  
PITTSBURG AIRPORT

FRED C. HART ASSOCIATES, INC.

### 1.2.5 Traffic Patterns

The facility has three entrances, only one of which is used for the transportation of hazardous wastes. The Edgewood gate at the eastern edge of the facility is locked at all times, and is only opened in emergencies. The lower gate, off Braddock Avenue, is locked except during shift changes and lunch hours. The main gate at the southeast end of the facility is manned by security personnel 24 hours a day, seven days a week. This is the only gate through which vehicles carrying hazardous waste may pass.

The route followed by the waste hauler is shown on the facility plan map shown in Figure 3. Trucks from the contracted waste hauler, Frontier Chemical, enter the compound through the Braddock Avenue gate and proceed under the overpass between Buildings 28 and 2 (Frontier Chemical is located approximately 175 miles north of the Swissvale plant). Trucks continue on the two-way asphalt road in front of Building 2 to the road perpendicularly intersecting a concrete road at Building 3. After a left turn onto the concrete road trucks proceed several hundred feet until they are conveniently located at the loading dock in front of Building 14. There, the trucks are maneuvered into a loading position with the rear of the trucks in contact with the dock. After loading and verifying the manifests trucks exit the facility via the same route.

Drummed wastes are delivered to the truck on pallets from the storage area by a forklift. Forklifts arrive at the trucks after following the finished gravel path outside the storage area around Building 37, up a ramp and onto the loading dock.





#### 1.2.5 Traffic Patterns (continued)

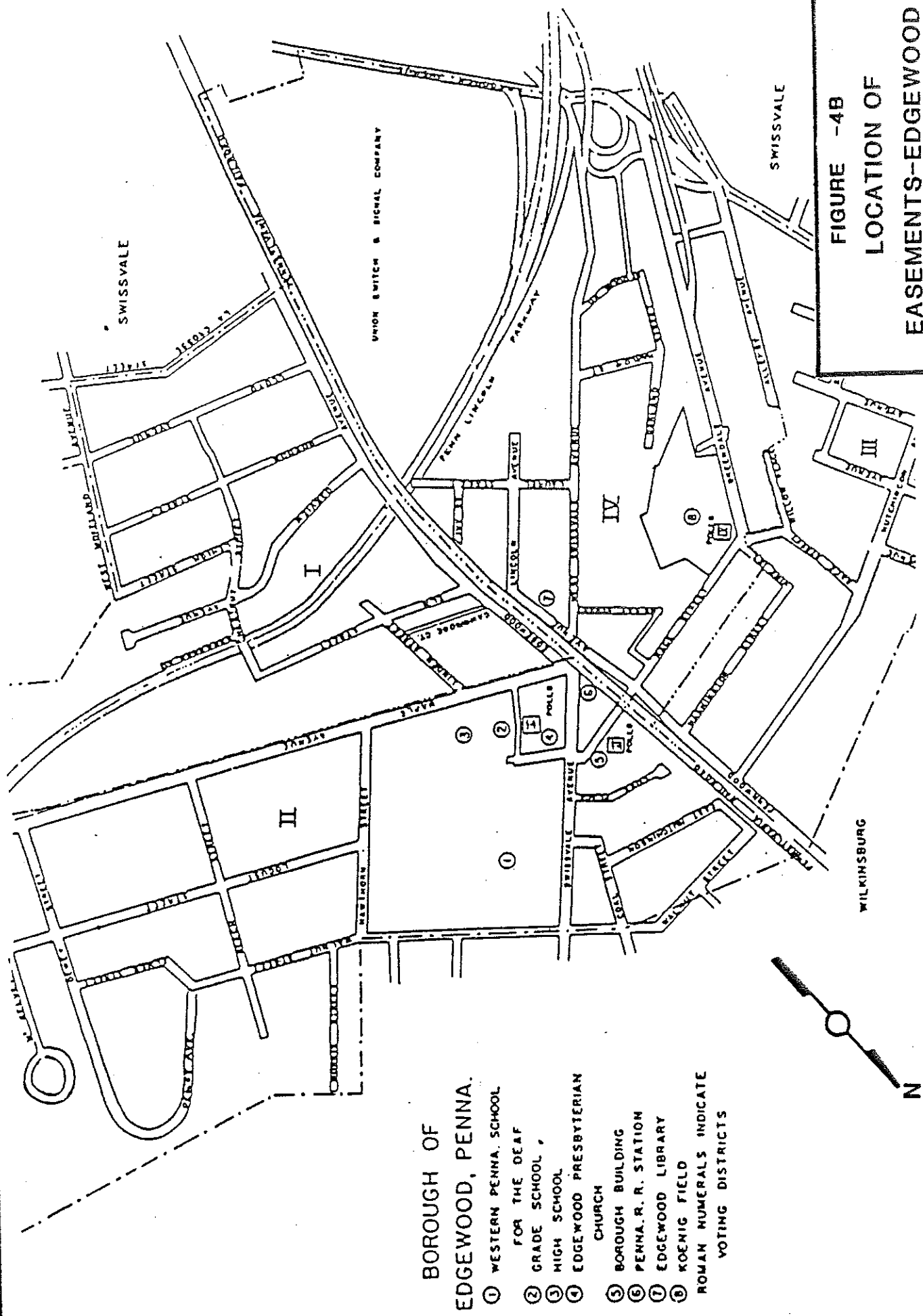
Internal transportation of hazardous wastes is accomplished by forklift and is supervised by the environmental coordinator. Wastes may be moved from the treatment plant in Building 9 to the staging area in Building 19 via the lightly travelled cinder surface between the two buildings. Wastes may also be transported to Building 19 from other Buildings, such as 56, 4 and 8. Although these routes are longer than that between Building 9 and 19, they are over well-maintained roads and thorough supervision combined with extensive safety measures minimize the possibility of a spill during transit. From Building 19 processed drums, are moved by forklift to the storage area. The path is a large wide cinder pathway, away from the main traffic flow of the facility. Drums that do not require processing may be moved from their place of origin directly to the storage area. The path followed for these movements depends on the origin, but is always as direct as possible.

Traffic volume on the facility roads is low. Employees may park personal vehicles within the facility boundaries, but traffic from these vehicles is minimal during operating hours. Most personal vehicles are parked in the lower lot. Truck traffic is limited to material delivery and product shipments and does not interfere with intra-facility hazardous waste movements.

#### 1.2.6 Location of Easements

The two maps included as Figures 4a and 4b show the boundaries of the facility and the roads in the area around the facilities. As shown, the facility is located partly in Swissvale and partly in Edgewood.





# BOROUGH OF EDGEWOOD, PENNA.

- ① WESTERN PENNA. SCHOOL  
FOR THE DEAF
- ② GRADE SCHOOL
- ③ HIGH SCHOOL
- ④ EDGEWOOD PRESBYTERIAN  
CHURCH
- ⑤ BOROUGH BUILDING
- ⑥ PENNA. R. R. STATION
- ⑦ EDGEWOOD LIBRARY
- ⑧ KOENIG FIELD
- ⑨ ROMAN NUMERALS INDICATE  
VOTING DISTRICTS

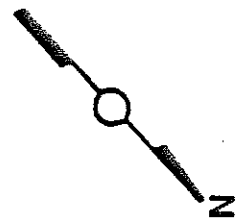


FIGURE -4B  
LOCATION OF  
EASEMENTS-EDGEWOOD  
FRED C. HART ASSOCIATES, INC.

## 2.0 OPERATIONS DESCRIPTION

This section describes the production processes at USSD that generate hazardous wastes, the water treatment plant, and the waste storage facility. Included are descriptions of waste types, volumes and where applicable, design specifications. Also included is a brief description of operating practices with respect to nonhazardous wastes.

### 2.1 Waste Generating Operations

Hazardous wastes are generated at several buildings at USSD in the fabrication of marketable products. The operations and the wastes generated are described below.

#### 2.1.1 Painting

Many of USSD's products require painting prior to shipment. This painting usually occurs in one of the three spray booths in Building 4, although the Building 10 complex and annex also contain some painting areas.

Spray booth overspray may contact the walls of the booths, or become entrained in the water curtain. Any paint that contacts the wall can be removed by peeling the sheet of replaceable "Pell-filmite" material from the wall. Any paint captured in the water curtain accumulates in a 600 gallon tank at the base of the booth. "Clairivant", a commercial flocculent, is added to precipitate paint suspended from the water and allow clarified water to be recycled and reused. The flocculated waste material precipitates as a sludge, and upon removal from the tank is typically placed in DOT-approved steel 55-gallon drums with the wall and floor scrapings. Consistent with drum handling procedures around the plant, the drum is sealed with a gasketed lid and bolted ring, labelled, and sent for processing or to the storage area. This material is considered hazardous due to its toxicity characteristic.

### 2.1.1 Painting (continued)

Laboratory results reveal that the paint sludge may contain lead in excess of allowable amounts. Each tank cleanout results in an estimated six drums of wastes, or 30 drums per year.

A second waste stream from the painting operations results from waste paints, including paint residues and spray gun cleanings. These material are also placed in closed drums, which are opened only to add more wastes. They are considered hazardous based on their EP toxic lead content. They may also be ignitable if excess xylene is used as a thinner. Laboratory analyses reveal that the flash point is near the threshold for consideration as an ignitable waste. Approximately two 55-gallon drums may be generated annually.

The third waste stream from painting operations includes paint spray make up air and discharge air filters. These filters are replaced as required with waste filters placed in drums and processed as hazardous waste. They are considered hazardous due to toxic characteristics. Laboratory results reveal that the ventilation filters contain levels of lead and chromium near or above the toxic threshold levels. This waste stream results in the production of approximately four drums of waste per year.

### 2.1.2 Plating

Plating operations occur in Building 8. The plated parts are used in various electrical and mechanical components of railroad signalling and control systems. Among the materials plated are steel, aluminum, brass, copper, bronze, and castings. The detailed plated parts are used in electrical relays and other types of electric and electronic devices, while the mechanical parts are used in electro-mechanical, electro-pneumatic, and general mechanical devices for the control of

### 2.1.2 Plating (continued)

railroad and rapid transit systems.

The plating operations consist of three parts, as shown below.

- ° cleaning
- ° electroplating
- ° anodizing

Cleaning is performed to prepare parts for plating. Alkaline base cleaners are used in conjunction with sulfuric and muriatic acids for cleaning and pickling. A vapor degreaser containing trichloroethylene is used as a degreasing agent.

Several types of electroplating are practiced with different bath contents. The contents of each are shown below.

<u>Bath</u>	<u>Contents</u>
Cad	Cad balls, sodium cyanide, caustic soda, brightener
Copper	Copper, caustic soda, sodium cyanide
Tin	Caustic Potash, Tin-Sol-B, Tin Stagnate
Zinc	Zinc, brightener, sodium cyanide, caustic
Hard Chrome	Chromic acid, sulfuric acid

Aluminum anodizing is the third process operating in Building 8. The anodizing operation uses chromate dyes, alkaline cleaners, and acids.

As a result of the plating operations, hazardous wastes are generated. The wastes generated are shown below.



### 2.1.2 Plating (continued)

<u>Type</u>	<u>Characteristic</u>	<u>Estimated Amounts/Yr.</u>	<u>In-Plant Disposition</u>
Metal and cyanide contaminated rinse waters	Toxic	0.1 mgd	Treatment at rinse water treatment plant
Spent baths	Toxic	Variable*	Rinsewater treatment plant
Plating bath sludges	Toxic	16 drums/yr.	Drummed and processed for storage
Spent Trichloroethylene	Toxic	1000 gal/yr.	Drummed and processed for storage

\*"Variable" means that it is not a regular practice of USSD to empty the plating baths.

### 2.1.3 Heat Treating

USSD's heat treating operations are located in Building 56. Heat treating is performed for a variety of purposes on a number of materials. The types of heat treats and the materials are shown below.

- ° Anneal - Ferrous, non-ferrous
- ° Normalize - Various carbon steels, alloy steels
- ° Austemper - Various carbon steels, low alloy steels, tool steels
- ° Stress Relief - Ferritic steels
- ° Case Hardening - Park carburizing, cyanidizing
- ° Induction hardening - Steel, cast iron

The heat treating processes result in two listed hazardous waste streams.

They are shown below.

<u>EPA NO</u>	<u>Description</u>	<u>Characteristics</u>	<u>Estimated Amounts/Yr.</u>
F011	Spent solutions from salt bath heat treating	Reactive, Toxic	40 30-gal
D000	Toxic Wastes (General)	Toxic	Included with above

#### 2.1.4 Zinc Phosphating

Another potential source of hazardous waste at USSD is the zinc phosphating operations, which occur in Building 4 prior to painting. The zinc phosphating system is a five step process, with five different tanks. The five steps are shown below.

1. Alkaline degreaser
2. Rinse
3. Zinc Phosphating
4. Rinse
5. Zinc Chrome bath

Of these five tanks, only the zinc chrome bath may be considered hazardous due to high levels of hexavalent chrome. The bath is not emptied, with makeup solution added to maintain the correct concentrations. However, should the material spill, or should a small amount be inadvertently wasted, it would be managed as a hazardous waste.

#### 2.1.5 Other Production Processes

A wide variety of other operations occur at the USSD facility that do not produce hazardous wastes. It is USSD's practice to notify Environmental Protection Agency, Pennsylvania Department Environmental Resources, and Frontier Chemical should a change in raw materials or production operations occur that results in the generation of a hazardous waste.

#### 2.1.6 Water Treatment Operations

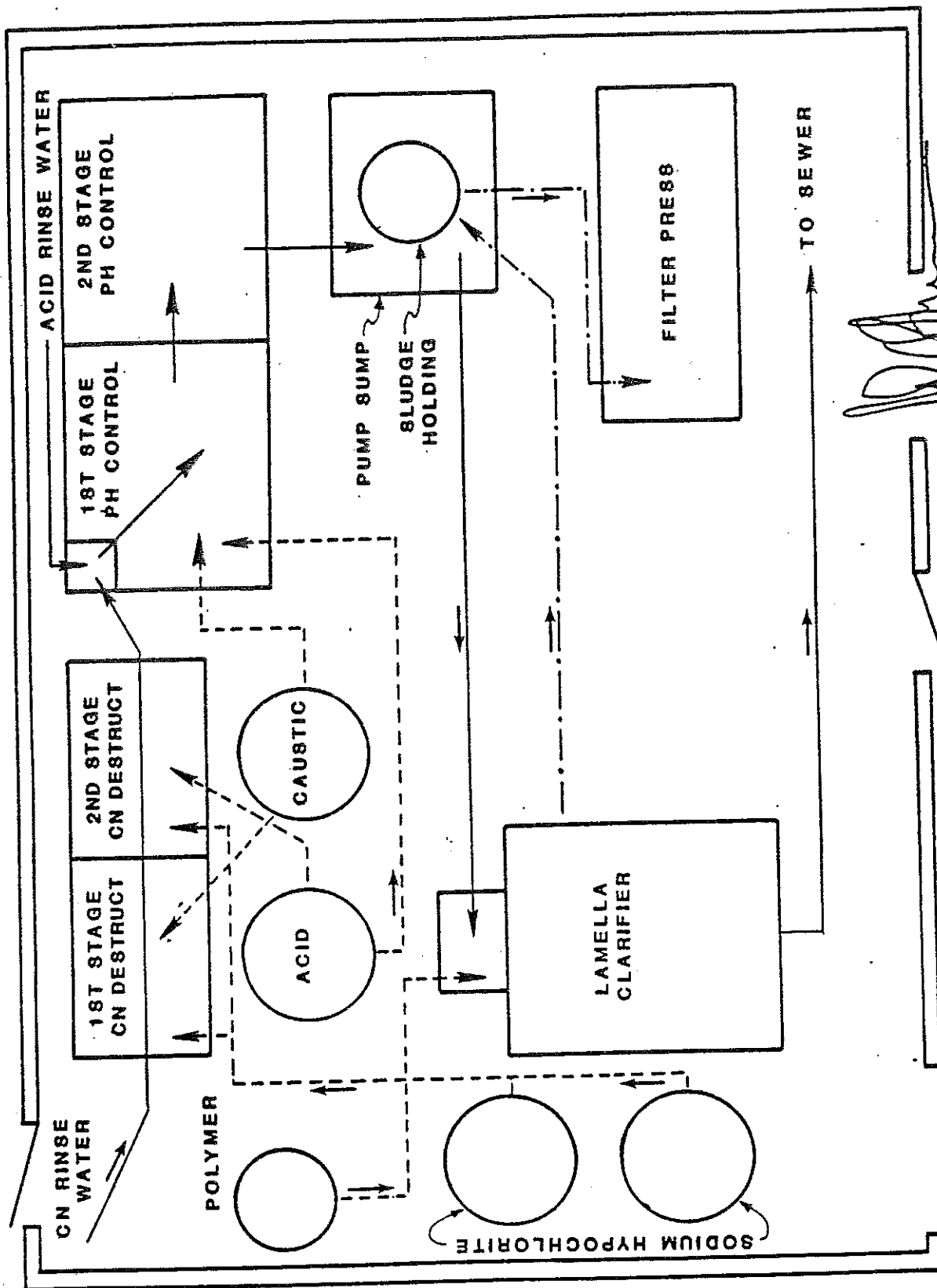
Building 9 is the water treatment plant for the rinse waters from the plating operations in Building 8 and for miscellaneous process liquids such as spent plating baths, and battery acids. A schematic of the system is shown in Figure 5. This system discharges to the Allegheny County Sanitary POTW and operates under guidance of the Environmental Protection Agency metal finishing categorical pretreatment regulations. Accordingly,

#### 2.1.6 Water Treatment Operations (continued)

this water treatment system is not subject to RCRA regulations. However the following system descriptions<sup>ARE</sup> provided for general informational purposes and to provide a general understanding of how wastes are generated at the final stage of the water treatment process. It might also be noted that the plant does not discharge to any surface or groundwater body and therefore is not subject to NPDES regulations.

The operations in Building 9 involve a two stage cyanide destruct system, pH control, and clarification followed by a sludge filter press. Drains from rinse tanks containing cyanide are connected to the CN destruct system, while all other drains lead to the pH adjustment tanks..

The CN drain system flows into the first stage of the CN destruct system where the pH is raised and sodium hypochlorite added to initiate the oxidation-reduction of the CN. The water then flows into the second stage of the CN destruct system where a high pH is maintained and additional sodium hypochlorite added, if required. From there, the water flows into a mixing chamber where it is blended with the outflow from the other floor drain system. It then flows into the first stage tank of the final pH adjustment systems where the pH is adjusted to pH 9 by the addition of acid or caustic, as required. Next, the water proceeds to the second stage of pH adjustment for additional retention time. From there, the flow is into the pump sump before progressing to the clarifier. From the pump sump, the water is pumped into the first stage of the clarifier where a polymer is added to induce flocculation. The water then flows through the clarifier chambers, where the suspended metals separate and settle to the bottom as sludge. The clean supernatant flows out of the top of the clarifier to the municipal sewer system. Periodically, the sludge is pumped from the bottom of the clarifier



NOT TO SCALE

- SLUDGE FLOW
- WATER FLOW
- ... CHEMICAL FLOW
- ← DIRECTION OF FLOW

*[Signature]*

MICHAEL A. BARBARA, PE PF-033008-E

FIGURE -6

RINSEWATER TREATMENT PLANT  
WATER-CHEMICAL-SLUDGE SCHEMATIC

FRED C. HART ASSOCIATES, INC.

### 2.1.6 Water Treatment Operations (continued)

to the sludge holding tank. When the sludge level reaches a predetermined level in the sludge holding tank, it is pumped to the filter press, where a dry cake is formed. This dry cake is then deposited in a ring-top 55-gallon drum and labeled as to content.

## 3.0 WASTE CHARACTERIZATION AND MATERIAL CONTAINERIZATION

This section describes the chemical and physical nature of the hazardous wastes stored at the Union Switch and Signal Division (USSD) facility and the waste analysis plan for sampling, testing, and evaluating the wastes to assure that sufficient information is available for their safe handling.

### 3.1 Chemical and Physical Analyses

Hazardous wastes are stored at the USSD facility at the drum storage area, located behind Building 56. All wastes are stored in sealed and properly labelled 55 or 30-gallon drums. The drums conform to the Department of Transportation Specifications D.O.T. 17H and D.O.T. 17C for storage and shipment of hazardous materials. The wastes can be grouped into the following general classifications:

- ° toxic
- ° reactive
- ° ignitable
- ° corrosive

The wastes generated and stored at the site by USSD are summarized in Table 1 and include the following:

### 3.1 Chemical and Physical Analyses (continued)

- ° Plating wastes (F006, F007, F008, F009) - are classified as hazardous due to their reactivity and toxicity. They are generated in the plating process in Building 8 and contain cyanide and metals.
- ° Metal heat treating wastes (F011) - are classified as hazardous due to their reactivity and toxicity. They are generated in Building 56 and contain cyanide.
- ° Reactive wastes (D003) - cyanide bearing wastes which can generate toxic gases, vapors or fumes when exposed to low pH conditions. They may be generated from plating operations in Building 8 or the heat treat operations in Building 56. This group includes powders resulting from splashes of the cyanide heat treatment solution.
- ° Spent zinc chromate baths (D007) - are classified as hazardous due to their EP toxicity based on their chromium content. The zinc chromate bath is found in Building 4.
- ° Paint wastes (D001,D007,D008) - are classified as hazardous due to their EP toxicity based on their lead or chromium content, and because they may be ignitable. This group includes waste paints, paint sludges, and contaminated air filters from the painting operations in Buildings 4 and 10.
- ° Halogenated solvents (F001) - spent halogenated solvents are listed as hazardous wastes due to their toxic characteristics. This group includes trichloroethylene used to degrease metal parts prior to plating in Building 8.

### 3.1 Chemical and Physical Analyses (continued)

- ° Ignitable wastes (D001) - wastes, such as waste paints that contain paint thinners are hazardous because they have a flash point of less than 60°C and contain less than 25% alcohol by volume. They are most commonly generated in Building 4, but may be generated at other locations in the plant.
- ° Corrosive wastes (D002) - wastes such as battery acid are hazardous because they have a pH less than or equal to 2 or greater than or equal to 12.5. Battery acids come from spent batteries from plant vehicles while other corrosive wastes may be generated at other locations in the plant.

Because USSD stores only those wastes generated on-site from processes monitored for production efficiency by plant personnel, the characteristics of the wastes are well-known. Furthermore, the composition of the wastes are not expected to change without the plant's knowledge beforehand, or without an indication that an unplanned and uneconomical mistake had occurred in the production process. Table 1 summarized the waste generated by USSD, and indicates the sources, the hazards, the typical composition based on laboratory results, and the estimated amount generated per year. The tests and procedures for determining changes in characteristics are described in the waste analysis plan.

USSD maintains all analytical data in the operating record and reports the latest analytical results on the sheets supplied by their contracted waste hauler, Frontier Chemical, or by the contracted laboratory. Reports on the know contents of the waste streams are included in the appendices.



TABLE 1

CHARACTERISTICS OF WASTES GENERATED BY USSD

<u>Waste</u>	<u>Source</u>	<u>Hazard</u>	<u>Typical Composition</u>	<u>Estimated Amount Generated/Year</u>
<u>Paint Wastes</u>				
° Paint Booth Sludge (D007)	Paint Booths	EP Toxic (Pb)	30% Paint Pigments 70% H <sub>2</sub> O 21 ppm Pb	30 drums <sup>1</sup>
° Waste Paints (D007, D001)	Cleanup, leftover	Ignitable EP Toxic (Pb)	Flash Point 75°F (variable) 20 ppm Pb	8 drums
° Intake & Exhaust Filters (D007, D008)	Paint booths	EP Toxic (Cr, Pb)	Pb, Cr 5 ppm (variable)	4 drums
<u>Plating Wastes</u>				
° Filter Press Sludge (F006)	Treatment of plating rinsewaters	Toxic	75% H <sub>2</sub> O with solids containing 80% Fe, 4% Ni, 4% Cd, 4% Zn, 4% Cu, 4% Cr	24 drums
° Spent Baths (F007)	Plating baths	Reactive, Toxic	Contain CN, metals	25 drums
° Spent Stripping Baths (F008)	Stripping baths	Reactive, Toxic	Contain CN, metals	
° Bath Sludges (F009) - Copper	Plating baths	Reactive	7% Cu, 8% NaCN, 5% NaOH, 80% Na <sub>2</sub> CO <sub>3</sub>	1 drum
- Brass		Reactive	3% Zn, 7% Cu, 5% NaCN, 80% Na <sub>2</sub> CO <sub>3</sub>	1 drum
- Cadmium		Reactive, Toxic	0.5% Cd, 6.5% CN, 3% NaOH, 90% Na <sub>2</sub> CO <sub>3</sub>	
- Tin		Reactive	80% Sn, 20% NaOH	4 drums

TABLE 1 (CONTINUED)

CHARACTERISTICS OF WASTES GENERATED BY USSD

<u>Waste</u>	<u>Source</u>	<u>Hazard</u>	<u>Typical Composition</u>	<u>Estimated Amount Generated/Year</u>
<u>Metal Heat Treat Wastes</u>				
° Sodium Cyanide Salts (F011, D003)	Heat Treat Tank	Toxic, Reactive	10-15% NaCN	(40) 30 gallon drums
<u>Miscellaneous Wastes</u>				
° Zinc Chromate Solution (D007)	Metal Cleaning	EP Toxic (Cr)	800 ppm Cr	20 drums
° Battery Acids (D002)	Vehicles	Corrosive	H <sub>2</sub> SO <sub>4</sub>	100 batteries
° Spent Trichloroethylene (F001)	Vapor Degreasing	Toxic	80% Trichlor 20% Oil & Grease	20 drums
<u>Off-Specification Products</u>				
° Acetone (U002)		Ignitable		1 drum
° Phenol (U188)		Toxic		1 drum
° Trichloroethylene (U228)		Toxic		1 drum
° Xylene (U239)		Ignitable		1 drum
° Methyl Ethyl Ketone (U159)		Ignitable, Toxic		1 drum
° Sodium Cyanide (P106)		Acute Hazard		1 drum

1 Drum is a 55-gallon container.

2 This bath has not been spent anytime in recent records. If it should be spent in the future, it would be emptied from the tank to a tank truck. No plans for this are anticipated.

### 3.2 Waste Analysis Plan - Routine Procedures

As stated above, the types and characteristics of the wastes generated and stored at USSD are well-known and understood. The objective of this waste analysis plan is to detail the tests required to determine or verify the characteristics of USSD's hazardous wastes in order to properly store the wastes routinely generated on-site. To accomplish this, the waste analysis plan includes a description of the test parameters for each waste stream, the rationale for choosing these parameters, the test methods used, the sampling methods used and the frequency of analysis.

The waste analysis plan is presented as a guide for personnel performing sampling and analysis of the streams. It describes the parameters for which the various waste streams may be tested, the recommended sampling procedures, the recommended sampling frequency, and the recommended analytical procedures to follow. Alternate, equivalent methods and procedures may be substituted.

### 3.3 Test Parameters

Table 2 outlines the waste parameters to be tested and the rationale for selecting each parameter. As shown in the table, listed wastes that may result from off-specification commercial products or the discarded commercial products are not tested because the properties of these materials required to determine proper standard operating procedures are well-known and are not expected to vary significantly without prior knowledge from the vendor. To date, no wastes in these categories have been at or transported from USSD's plant. They are addressed herein for comprehensive-ness and because of the unlikely possibility that they may require storage as wastes in the future. The remaining wastes are tested for the properties than can vary and influence the choice of storage options.

### 3.3 Test Parameters (continued)

The recommended test methods for evaluating the parameters are shown in Table 3. Tests are generally performed by a contracted laboratory. The address of the most frequently used laboratory is shown below.

NUS Corporation.

NUS Corporation  
Laboratory Services Division  
5350 Campbells Run Road  
Pittsburgh, PA 15205

No test parameters have been shown for confirming the compatibility of wastes with the containers. Operating experience has shown that the steel drums used by USSD are compatible with any of the wastes generated on-site and stored in the drums. Furthermore, data in the Chemical Engineer's Handbook indicates that only mineral acids significantly deteriorate steel drums, and no waste mineral acids are generated by USSD.

In order to ensure that wastes are not placed in reused drums containing residual materials that are incompatible, all drums are either filled with the contaminated form of the material originally stored in the drum, or triple-rinsed to remove any residual material prior to refilling with the generated waste. Rinse waters are treated in the treatment plant. Shop managers and foremen are under strict instructions to contact the environmental coordinator anytime a question concerning drum management arises.

TABLE 2

RATIONALE FOR TESTING WASTES

<u>Waste</u>	<u>Test Parameter</u>	<u>Rationale</u>
Spent Trichloroethylene	NT*	Listed Waste F001 (toxic)
Paint Wastes	EP Toxic (Pb, Cr)	Paint pigments are lead or chrome based
	Flash Point	Xylene (ignitable) used as paint thinner
Sodium Cyanide Salts	Cyanide, pH	Amount of CN determines disposal option
Filter Press Sludge	EP Toxic - Cd, Cr	Concentration of hazardous metals will vary depending on inputs and effects potential for resource recovery
	Other metals	
	Total Solids	Determines disposal options
Plating Bath Sludges	Cyanide, pH	Reactivity is determined by either parameter
	Metals	Effects resource recovery potential
Battery Acids	pH	Determines acceptability for disposal into the rinsewater treatment plant
Zinc Chromate Solution	pH	Determines storage option
	EP Toxic (Cr)	Hexavalent chromium may be present
Phenol	NT	Listed Waste U188 (toxic)
Trichloroethylene	NT	Listed Waste U228 (toxic)
Xylene	NT	Listed Waste U239(ignitable)
Methyl Ethyl Ketone	NT	Listed Waste U159 (toxic, ignitable)
Sodium Cyanide	NT	Listed Waste P106 (acutely hazardous)
Toxic Wastes (General)	NT	
Corrosive Wastes (General)	NT	

TABLE 2 (CONTINUED)

RATIONALE FOR TESTING WASTES

<u>Waste</u>	<u>Test Parameter</u>	<u>Rationale</u>
<u>Sump Contents</u>		
<u>Acids</u>	<u>pH</u>	If pH of sump contents is less than pH rainwater, a leaking drum may have contaminated the runoff
Caustics & Cyanides	Cyanide, pH	CN indicates leaking drum, pH confirms it
Other	TOC, Cr, Pb, Oil and Grease	Presence of leaking drum

---

\* NT = Not Tested

TABLE 3

\*METHODS FOR TESTING HAZARDOUS WASTE STREAMS

<u>Parameter</u>	<u>Recommended Test Method</u>	<u>Reference</u>
pG	Electrometric	Test Methods for Evaluating Solid Waste. Physical/Chemical Methods USEPA SW-846
Flash Point (Liquids)	Pensky-Martens Closed Cup Tester	ASTM Standard D-93-79 or D-93-80
Flash Point (Solids)	Pensky-Martens Closed Cup Tester	Modified ASTM D-93-79 Ignitability by Friction Test
Free Liquids	Paint Filter	2/25/83, Federal Register (proposed)
Total Solids	Gravimetric	Methods for Chemical Analysis of Watger and Wastes EPA-600/4-79-020 Method 335.2
Cyanide	Titrimetric	Methods for Chemical Analysis of Water and Wastes EPA-600/4-79-020 Method 8.55
Toxicity	Extraction Procedure	40 CFR 261, Appendix.II
Metals		
° Cadmium	Atomic Absorbption	Test Methods for Evaluating Solid Waste. Physical/Chemical Methods, Method 8.53
° Chromium	Atomic Absorbption	Test Methods for Evaluating Solid Waste. Physical/Chemical Methods, Method 8.54
° Lead	Atomic Absorbption	Test Methods for Evaluating Solid Waste. Physical/Chemical Methods, Method 8.56



TABLE 3 (CONTINUED)  
METHODS FOR TESTING HAZARDOUS WASTE STREAMS

<u>Parameter</u>	<u>Recommended Test Method</u>	<u>Reference</u>
TOC	Combustion or Oxidation	Methods for Chemical Analysis of Water and Wastes EPA-600/4-79-020 Method 415.1.
Oil and Grease	Infrared, Spectrophotometric	Methods for Chemical Analysis of Water and Wastes EPA-600/4-79-020 Method 413.2.

#### 4.0 CLOSURE PERFORMANCE STANDARD

This closure plan for Union Switch and Signal Division storage facility has been developed to ensure that a systematic approach will be followed such that the facility used for hazardous waste storage will be suitably decommissioned to eliminate or minimize the need for further maintenance, or any threat to human health or the environment. Specific procedures to satisfy the closure performance standard are presented in detail in the following:

All closure procedures will be performed under the close supervision of the environmental coordinator. In his absence a foreman trained in proper hazardous waste management and fully informed of the closure activities will be responsible.

#### 4.1 Procedure for Decommissioning of Storage Facility and Associated Equipment and Labor

Closure of the storage facility will occur in three phases:

- ° Discontinuation of delivery of wastes to the storage facility
- ° Removal of waste inventory
- ° Decommissioning of area and equipment

Shortly after the onset of the closure period, wastes will no longer be sent to the storage facility prior to shipment off-site. This discontinuation period is necessary to ensure that wastes will not be delivered to the site either during or after completion of the decommissioning procedures.

Upon delivery of the last drums of waste to the storage facility, the environmental coordinator will perform an inspection and inventory of each section of the storage area. The inspection will be performed to (1) verify the actual inventory is consistent with the records of reported waste quantities (2) confirm the integrity of all drums, labels, and pallets in preparation for inventory removal, (3) identify spills, leaks or cracks if any in the containment area. If spills or leaks are discovered, appropriate measures

#### 4.1 Procedure for Decommissioning of Storage Facility and Associated Equipment and Labor (continued)

will be used by the environmental coordinator to contain and remove liquids. The final waste inventory will be removed according to the transport operations described earlier in this document.

The environmental coordinator's inspection and inventory will also include an inventory of empty drums. This will encompass the entire facility and will ensure that no drums used for temporary accumulation of hazardous wastes will remain on-site without plans for secure storage and approved ultimate disposal. Drums contained in the facility which previously contained hazardous waste, but are considered "empty, but containing residue" will be collected and stored at the storage area. Empty, decontaminated drums will be checked for requirements of reconditioning and either shipped off-site for reconditioning or crushed prior to proper disposal.

For the purposes of this closure plan, it is assumed that a maximum expected inventory of 80 drums will require shipment at closure. The expected inventory is shown in Table 4. Shipment will occur by the normal procedures described earlier with USSD personnel transporting the drummed wastes from the storage facility to the certified hazardous waste transporter's trucks. There, the environmental coordinator and the transporter will verify that all containers are properly labelled and manifested.

As previously mentioned, Frontier Chemical Inc., 4626 Royal Avenue Niagara Falls, New York has been and is scheduled to be our waste removal hauler. Preparation of the drums will be performed by (2) Union Switch and Signal Division employees.

After the final inventory has been removed, decontamination will commence and be performed by New England Pollution Control Company, (or equivalent),

#### 4.1 Procedure for Decommissioning of Storage Facility and Associated

##### Equipment and Labor (continued)

Route 130 Robbinsville, New Jersey 08691. Decommissioning will consists of a thorough washdown of the concrete floor, ramps, berms, curb and piping with a mild solvent. The washdown will be followed by a pressure wash using a tank truck equipped with solution blower/pressure washer apparatus. An amount of water sufficient to fill the sump will be used to flush any residual wastes, if any, from the concrete floor into the sump. The pressure washing will be supplemented by scrubbing with a stiff broom. Rinseate will be collected in the sump. Visual inspection of the surface of the floor will aid in determining when the decontamination is complete. Rinseate would be discharged to the POTW or on site water treatment plant, as appropriate.

TABLE 4  
EXPECTED INVENTORY OF DRUMS  
STORAGE FACILITY AT CLOSURE \*

<u>ID NUMBER</u>	<u>CHARACTERISTIC</u>	<u># OF DRUMS</u>	<u>GALLONS</u>
F001	Toxic	5	275
F006	Toxic	6	330
F007	Reactive, toxic	6	330
F008	Reactive, toxic	4	220
F009 :	Reactive, toxic	4	220
F011	Reactive, toxic	37	1,110
D008	Ep Toxic (Pb)	12	660
D007	Ep Toxic (Cr)	-	-
D001	Ignitable	2	110
D000	Toxic	-	-
D002	Corrosive	2	110
**	Other	2	110
		<hr/> 80	<hr/> 3.475

\* If a routine disposal run occurs shortly before closure commenced, it is possible that there will be considerably less than 80 drums on-site .

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\*\* "Other" category may include off-spec commercial products such as U002, U188, U228, U239, U159, P106.

#### 4.2 Soil Sampling Program

Soil samples as described by Figure 6 on Page 32, were taken at 6" and 12" below grade on June 18, 1985 by Marcel D. Tourdot, Manager, Safety, Security and Environment. Lab results indicate that the soil samples would not be classified as EP toxic. Complete results of the lab analyses are included in Appendix A. Follow-up sampling will be done after decommissioning of the storage facility is completed. On the basis of the pre-decommissioning lab data, post decommissioning sampling will be limited to a level 6 inches below the ground surface as described by Figure 7.

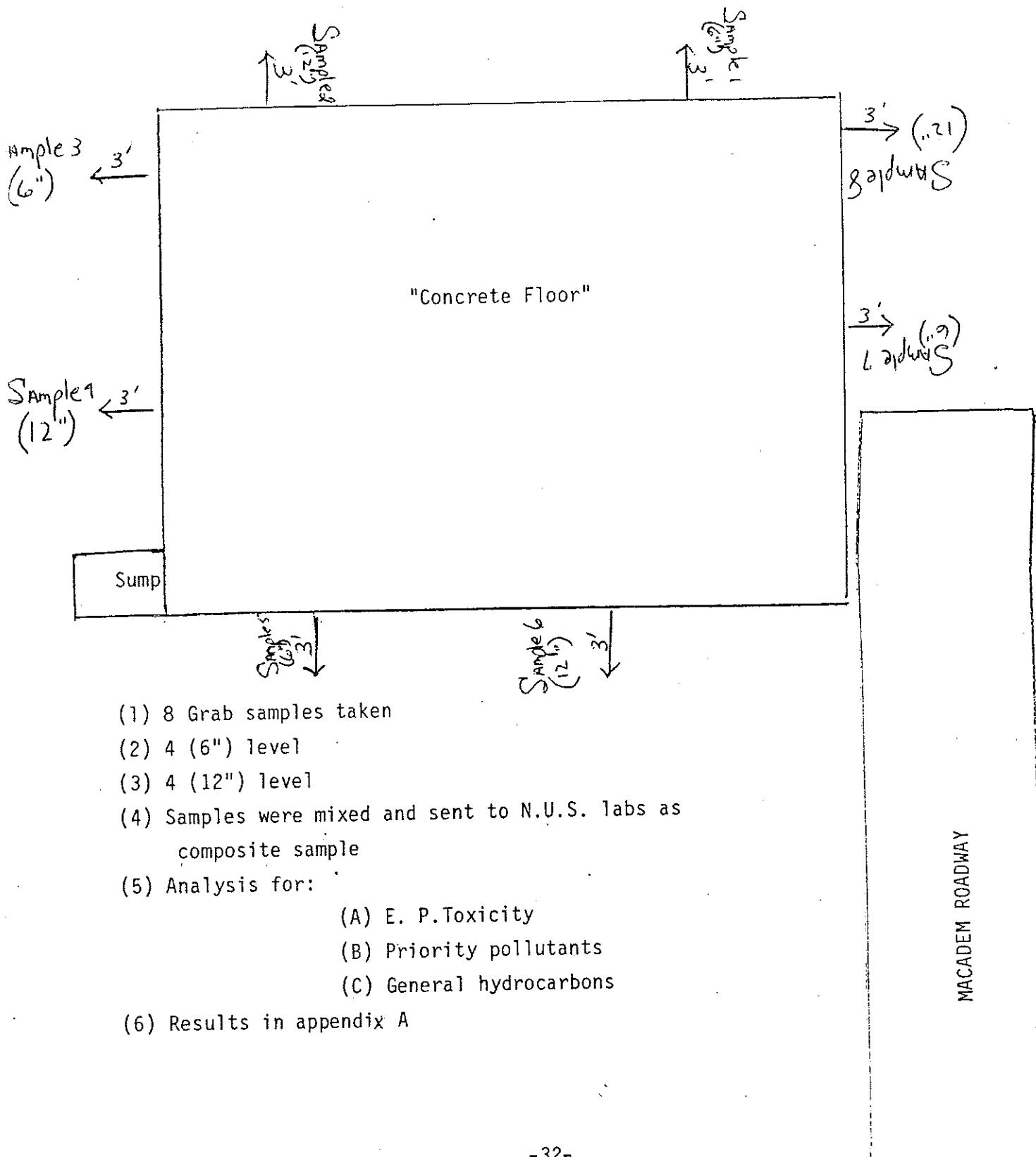
#### 4.3 Closure Schedule

The Pennsylvania Department of Environmental Resources will be notified at least 180 days prior to the date final closure is initiated. If the closure plan receives Pennsylvania Department of Environmental Resources approval prior to the expiration of the prescribed \*180 day time period, USSD may initiate closure procedures shortly thereafter.

The closure of the waste storage facility is expected to be completed within 15 weeks after the USSD closure plan is approved by the Pennsylvania Department of Environmental Resources (reference Table 5). A checklist for the closure program is shown in Table 6. Proper certifications of closure procedures are described in the following section of this plan.

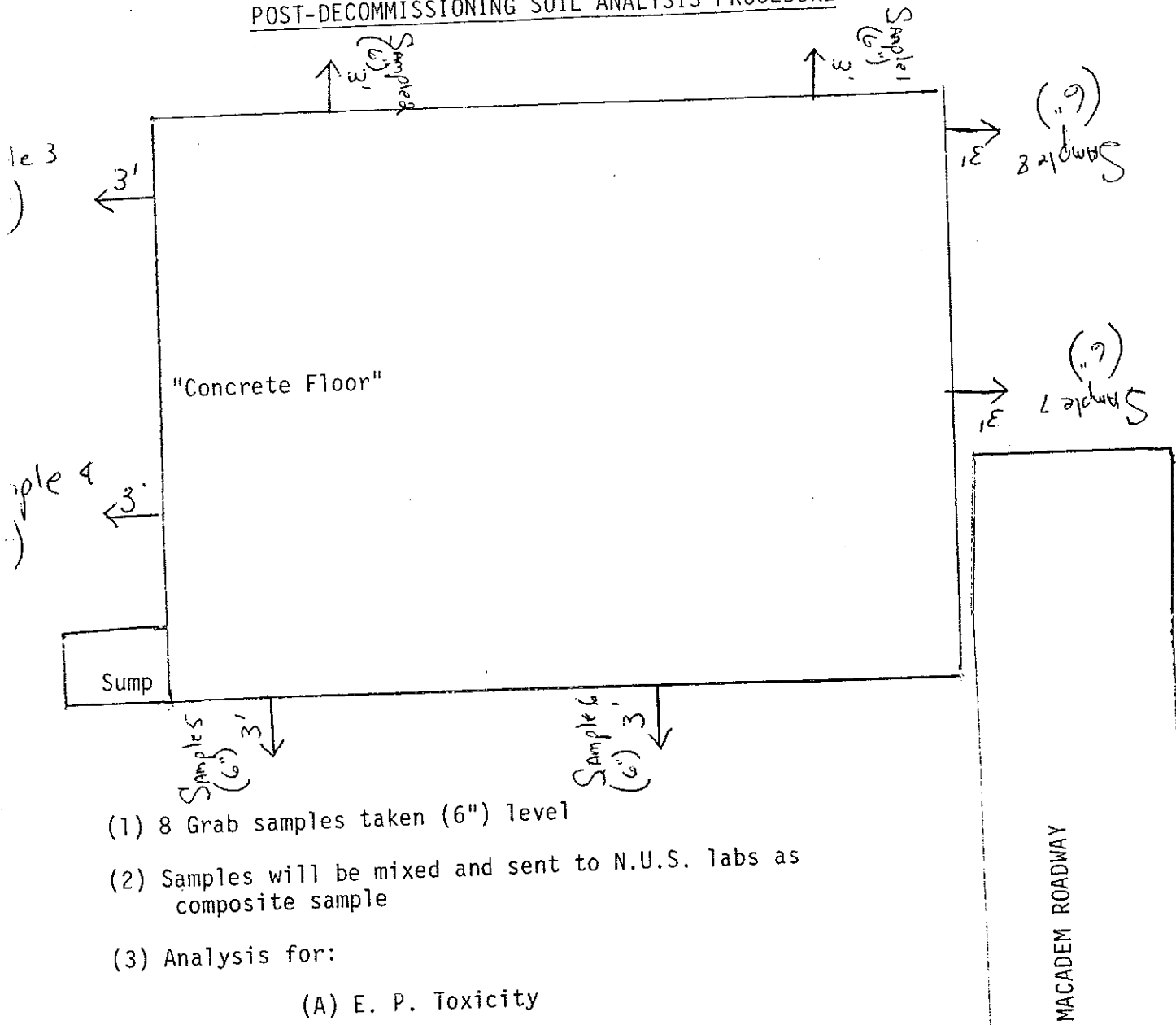
\* prescribed by RCRA regulations

FIGURE 6  
HAZARDOUS WASTE FACILITY  
PRE-DECOMMISSIONING SOIL ANALYSIS PROCEDURE



- (1) 8 Grab samples taken
- (2) 4 (6") level
- (3) 4 (12") level
- (4) Samples were mixed and sent to N.U.S. labs as composite sample
- (5) Analysis for:
  - (A) E. P. Toxicity
  - (B) Priority pollutants
  - (C) General hydrocarbons
- (6) Results in appendix A

**FIGURE 7**  
**HAZARDOUS WASTE FACILITY**  
**POST-DECOMMISSIONING SOIL ANALYSIS PROCEDURE**



- (1) 8 Grab samples taken (6") level
- (2) Samples will be mixed and sent to N.U.S. labs as composite sample
- (3) Analysis for:
  - (A) E. P. Toxicity
  - (B) Priority pollutants
  - (C) General hydrocarbons



TABLE 5  
CLOSURE TIME SCHEDULE  
WEEK NUMBER

Closure Task	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Discontinue wastes to storage facility															
Remove final waste inventory from storage area															
Decommission storage facility															
Laboratory analyses															
Remove residuals (if any)															
Certification															

TABLE 6

4.3.1 Checklist for Program Completion

YES/DATE      NO

1. 180 day notice to Pennsylvania Department of Environmental Resources
2. Submittal of Closure Plan
3. Certification of Proper Closure: USSD  
PE
4. Acceptance of last incoming waste
5. Waste inventory reconciliation  
(See Exhibit for working field copy)
6. Confirm integrity of drums for  
preparation for shipment
7. Inspect spills, leaks, cracks  
in containment area
8. Soil analysis as appropriate
9. Waste removal
10. Decommissioning of area and equipment
11. Final inspection of area

## 5.0 PROFESSIONAL ENGINEERS CERTIFICATION

At the completion of closure activities, a registered professional engineer licensed in the State of Pennsylvania will inspect the facilities and certify that closure was performed in accordance with the specifications in the closure plan. USSD will submit a similar certification of proper closure (ref. appendix for certification forms to be duly signed and executed at completion of closure).

A copy of the approved closure plan and all revisions to the plan will be maintained at Union Switch and Signal Division until the certification of closure completeness has been submitted and accepted by the Pennsylvania Department Environmental Resources.

## 6.0 CLOSURE COST ESTIMATE

### 1. Removal of Waste Inventory

A. Shipped for disposal 80 drums @ \$100/drum	\$8,000
B. Shipped for disposal 5 drums filter cake and associated materials @ \$100/drum	500
C. Plant Labor 32 hours @15/hour	480
D. Supervision 16 hours @ \$20/hour	<u>320</u>
	\$9,300

### 2. Decommissioning of Storage Facility

A. Treatment of Storage Area Rinsewaters 880 gallons @ \$0.20/gallon	200
B. Plant Labor 100 hours @ \$15/hour	1,500
C. Supervision 50 hours at \$20/hour	<u>1,000</u>
	\$2,700

### 3. Analytical Services

Rinsewater samples, 20 tests @ \$20/test	400
Soil Samples 10 tests at 10 parameters per test \$40/test	<u>4,000</u>
	\$4,400

### 4. Closure Certification

A. Professional Services (10 hours @ \$65/hour)	600
B. Expenses (1 day @ \$50/day)	50
C. Transportation	<u>50</u>
	\$0,700

### 5. Subtotal (Items 1-4)

A. Administration (10%)	1,400
B. Contingency (10%)	1,400

### 6. TOTAL CLOSURE COST

\$13,100

\$19,900

APPENDICES

A. Lab Results per Nus Corporation

B. Closure Completion Certification Form



Laboratory Services Division  
5350 Campbells Run Road  
Pittsburgh, PA 15205

REMIT TO:  
Park West Two  
Cliff Mine Road  
Pittsburgh, PA 15275

412-788-1080

## LAB ANALYSIS REPORT

CLIENT NAME: UNION SWITCH & SIGNAL DIVISION  
ADDRESS: 1799 BRADDOCK AVENUE  
SWISSALE, PA 15218  
ATTENTION: MR. AL SPROUL

REPORT DATE: 08/01/85

RUS CLIENT NO: 110501  
RUS SAMPLE NO: 15051612L  
VENDOR NO: 05765200  
WORK ORDER NO: 15830  
DATE RECEIVED: 05/21/85

SAMPLE IDENTIFICATION: SAMPLE #4 - PAD

05/13 LEACH

TEST	DETERMINATION	RESULTS	UNITS
1275	EP TOXICITY PACKAGE		
4038	Arsenic, leachable (As)	< 0.001	ug/l
1048	Barium, leachable (Ba)	0.6	ug/l
4098	Cadmium, leachable (Cd)	0.012	ug/l
1148	Chromium, leachable (Cr)	9.01	ug/l
4208	Lead, leachable (Pb)	< 0.03	ug/l
1258	Mercury, leachable (Hg)	< 0.0002	ug/l
4298	Selenium, leachable (Se)	< 0.004	ug/l
1308	Silver, leachable (Ag)	< 0.01	ug/l
5907	Initial pH of leachate	7.2	
5908	Final pH of leachate	5.2	
5909	Acid Required/100 g	48	ml
5910	EP Toxicity Extraction		

COMMENTS:

Reviewed and Approved by: JMC



A

Laboratory Services Division  
5350 Campbells Run Road  
Pittsburgh, PA 15205

REMIT TO:  
Park West Two  
Cliff Mine Road  
Pittsburgh, PA 15275

412-788-1080

## LAB ANALYSIS REPORT

CLIENT NAME: UNION SWITCH & SIGNAL DIVISION NUS CLIENT NO: 360501  
ADDRESS: 1789 BRADDOCK AVENUE NUS SAMPLE NO: 15051619  
SWISSVALE, PA 15218 VENDOR NO: 05765200  
REPORT DATE: 08/01/85 WORK ORDER NO: 55830  
ATTENTION: MR AL SPROUL DATE RECEIVED: 05/21/85

SAMPLE IDENTIFICATION: SAMPLE #4 - PAD 05/13 AS REC'D

TEST	DETERMINATION	RESULTS	UNITS
0115	VOLATILES-PP IN SEDIMENT		
OV41	Acrolein	< 10000	ug/kg
OV42	Acrylonitrile	< 10000	ug/kg
OV43	Benzene	560	ug/kg
OV45	Bromoform	< 500	ug/kg
OV46	Carbon Tetrachloride	< 500	ug/kg
OV47	Chlorobenzene	< 500	ug/kg
OV48	Chlorodibromomethane	< 500	ug/kg
OV49	Chloroethane	< 1000	ug/kg
OV50	2-Chloroethylvinyl Ether	< 1000	ug/kg
OV51	Chloroform	< 500	ug/kg
OV52	Dichlorobromomethane	< 500	ug/kg
OV54	1,1-Dichloroethane	< 500	ug/kg
OV55	1,2-Dichloroethane	< 500	ug/kg
OV56	1,1-Dichloroethylene	< 500	ug/kg
OV57	1,2-Dichloropropane	< 500	ug/kg
OV58	1,3-Dichloropropylene	< 500	ug/kg
OV59	Ethylbenzene	< 500	ug/kg
OV60	Methyl Bromide	< 1000	ug/kg
OV61	Methyl Chloride	< 1000	ug/kg
OV62	Methylene Chloride	< 500	ug/kg
OV63	1,1,2,2-Tetrachloroethane	< 500	ug/kg
OV64	Tetrachloroethylene(Perchloro)	< 500	ug/kg
OV65	Toluene	< 500	ug/kg
OV66	1,2-Trans-Dichloroethylene	< 500	ug/kg
OV67	1,1,1-Trichloroethane	< 500	ug/kg
OV68	1,1,2-Trichloroethane	< 500	ug/kg
OV69	Trichloroethylene	< 500	ug/kg
OV70	Trichlorofluoromethane	< 500	ug/kg
OV71	Vinyl Chloride	< 1000	ug/kg





Laboratory Services Division  
5350 Campbells Run Road  
Pittsburgh, PA 15205

REMIT TO:  
Park West Two  
Cliff Mine Road  
Pittsburgh, PA 15275  
412-788-1080

## LAB ANALYSIS REPORT

CLIENT NAME: UNION SWITCH & SIGNAL DIVISION NUS CLIENT NO: 360501  
ADDRESS: 1789 BRADDOCK AVENUE NUS SAMPLE NO: 15051618  
SWISSVALE, PA 15218  
REPORT DATE: 08/01/85 VENDOR NO: 05765200  
ATTENTION: MR. AL SPROUL WORK ORDER NO: 55830  
DATE RECEIVED: 05/21/85

SAMPLE IDENTIFICATION: SAMPLE #4 - PAD 05/13 AS REC'D

TEST	DETERMINATION	RESULTS	UNITS
O125	ACIDS - PP IN SEDIMENT		
OA21	2-Chlorophenol	< 1480	ug/kg
OA22	2,4-Dichlorophenol	< 1480	ug/kg
OA23	2,4-Dimethylphenol	< 1480	ug/kg
OA24	4,6-Dinitro-o-cresol	< 7400	ug/kg
OA25	2,4-Dinitrophenol	< 7400	ug/kg
OA26	2-Nitrophenol	< 1480	ug/kg
OA27	4-Nitrophenol	< 7400	ug/kg
OA28	p-Chloro-a-cresol	< 1480	ug/kg
OA29	Pentachlorophenol	< 7400	ug/kg
OA30	Phenol	< 1480	ug/kg
OA31	2,4,6-Trichlorophenol	< 1480	ug/kg
OE22	LLS - Extraction		





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## LAB ANALYSIS REPORT

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ADDRESS: 1789 BRADDOCK AVENUE NUS SAMPLE NO: 15051418  
SWISSVALE, PA 15218 VENDOR NO: 05765200  
REPORT DATE: 08/01/85 WORK ORDER NO: 55830  
ATTENTION: MR. AL SPROUL DATE RECEIVED: 08/21/85

SAMPLE IDENTIFICATION: SAMPLE #4 - PAD 05/13 AS REC'D

TEST	DETERMINATION	RESULTS	UNITS
P135	BASE NEUTRALS - PP IN SEDIMENT		
OB51	Acenaphthene	< 1480	ug/kg
OB52	Acenaphthylene	< 1480	ug/kg
OB53	Anthracene	< 1480	ug/kg
OB54	Benzidine	< 7400	ug/kg
OB55	Benzo(a)Anthracene	< 1480	ug/kg
OB56	Benzo(a)Pyrene	< 1480	ug/kg
OB57	3,4-Benzofluoranthene	< 1480	ug/kg
OB58	Benzo(ghi)Perylene	< 1480	ug/kg
OB59	Benzo(k)Fluoranthene	< 1480	ug/kg
OB60	Bis(2-Chloroethoxy)Methane	< 1480	ug/kg
OB61	Bis(2-Chloroethyl)Ether	< 1480	ug/kg
OB62	Bis(2-Chloroisopropyl)Ether	< 1480	ug/kg
OB63	Bis(2-Ethylhexyl)Phthalate	< 1480	ug/kg
OB64	4-Bromophenyl Phenyl Ether	< 1480	ug/kg
OB65	Butyl Benzyl Phthalate	< 1480	ug/kg
OB66	2-Chloronaphthalene	< 1480	ug/kg
OB67	4-Chlorophenyl Phenyl Ether	< 1480	ug/kg
OB68	Chrysene	< 1480	ug/kg
OB69	Dibenzo(a,h)Anthracene	< 1480	ug/kg
OB70	1,2-Dichlorobenzene	< 1480	ug/kg
OB71	1,3-Dichlorobenzene	< 1480	ug/kg
OB72	1,4-Dichlorobenzene	< 1480	ug/kg
OB73	3,3'-Dichlorobenzidine	< 2960	ug/kg
OB74	Diethyl Phthalate	< 1480	ug/kg
OB75	Dimethyl Phthalate	< 1480	ug/kg
OB76	Di-N-Butyl Phthalate	< 1480	ug/kg
OB77	2,4-Dinitrotoluene	< 1480	ug/kg
OB78	2,6-Dinitrotoluene	< 1480	ug/kg
OB79	Di-N-Octyl Phthalate	< 1480	ug/kg
OB80	1,2-Diphenylhydrazine(Azobz)	< 2960	ug/kg
OB81	Fluoranthene	< 1480	ug/kg
OB82	Fluorene	< 1480	ug/kg
OB83	Hexachlorobenzene	< 1480	ug/kg

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CLIENT ORIGINAL



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Pittsburgh, PA 15275

412-785-1080

# LAB ANALYSIS REPORT

CLIENT NAME: UNION SWITCH & SIGNAL DIVISION NUS CLIENT NO: 360501  
ADDRESS: 1789 BRADDOCK AVENUE NUS SAMPLE NO: 15051618  
SWISSVALE, PA 15218  
REPORT DATE: 08/01/85 VENDOR NO: 05765200  
ATTENTION: MR. AL SPROUL WORK ORDER NO: 55830  
DATE RECEIVED: 05/21/85

SAMPLE IDENTIFICATION: SAMPLE #4 - PAD 05/13 AS REC'D

TEST	DETERMINATION	RESULTS	UNITS
OB84	Hexachlorobutadiene	< 1480	ug/kg
OB85	Hexachlorocyclopentadiene	< 1480	ug/kg
OB86	Hexachloroethane	< 1480	ug/kg
OB87	Indeno(1,2,3cd) Pyrene	< 1480	ug/kg
OB88	Isophorone	< 1480	ug/kg
OB89	Naphthalene	< 1480	ug/kg
OB90	Nitrobenzene	< 1480	ug/kg
OB91	N-Nitrosodimethylamine	< 1480	ug/kg
OB92	N-Nitrosodi-N-Propylamine	< 1480	ug/kg
OB93	N-Nitrosodiphenylamine	< 1480	ug/kg
OB94	Phenanthrene	< 1480	ug/kg
OB95	Pyrene	< 1480	ug/kg
OB96	1,2,4-Trichlorobenzene	< 1480	ug/kg





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# LAB ANALYSIS REPORT

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ADDRESS: 1789 BRADDOCK AVENUE NUS SAMPLE NO: 15051618  
SWISSVALE, PA 15218 VENDOR NO: 05765200  
REPORT DATE: 08/01/85 WORK ORDER NO: 55830  
ATTENTION: MR AL SPROUL DATE RECEIVED: 05/21/85

SAMPLE IDENTIFICATION: SAMPLE #4 - PAD 05/18 AS REC'D

<u>TEST</u>	<u>DETERMINATION</u>	<u>RESULTS</u>	<u>UNITS</u>
OM98	Hydrocarbon GC Scan	< 10	mg/kg

CLOSURE COMPLETION CERTIFICATION FORM

Closure of the hazardous waste storage facility operated under interim status authority (PAD 000001115) has been performed in accordance with the closure plan dated October 1985, prepared by Union Switch and Signal Division and as approved by the Pennsylvania Department of Environmental Resources.

Michael A. Barbara, Manager  
Hazardous Waste and Environmental  
Studies Group  
Professional Engineer 033008-E  
Fred C. Hart Associates  
New York, New York

Marcel D. Tourdot, Manager  
Safety, Security and Environment  
Union Switch and Signal Division  
American Standard Inc.  
1789 South Braddock Avenue  
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